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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GABOR, OTILIA

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 04/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,781

Applicant(s)

FREDERICK ET AL.

Examiner

Otilia Gabor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 52-90 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 52-69, 74-80 and 83-90 is/are rejected.
- 7) ☒ Claim(s) 70-73, 81 and 82 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 27 February 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Response

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 02/27/2003 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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4. Claims 52, 53, 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriarty (U. S. Patent 5184692) and further in view of Pabon et al. (U. S. Patent 6466513).

Moriarty discloses a gamma ray radiation source carrier used in a logging-while-drilling assembly comprising a detector 44, 46 including a radiation sensing element such as a scintillator for transforming radiation into light and a light receiving element such as a photomultiplier for transforming the light from the scintillator into electrical pulses. The detector assembly is included in a tubular body 18 which includes windows 62 and 64 for letting gamma rays into and out of the body 18 where the detector is positioned. Moriarty discloses windows 62 and 64 as being transparent to gamma radiation, but he fails to disclose PEEK as the material of which the windows are made. However, this feature constitutes only a matter of design choice since as shown by Pabon et al. it is well known to use windows made of PEEK on detector chambers used in logging and drilling assemblies.

5. Claims 54-69, 75-80, 83-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriarty and Pabon and further in view of Frederick et al. (U. S. Patent 5962855).

Moriarty fails to disclose the specific insulated structure of the detector assembly as claimed, however one would have been motivated to use the isolation and support structure of Frederick et al. since it offers a maximum volume ruggedized detector package capable of being used in harsh commercial and industrial environments.

Frederick et al. discloses a gamma radiation detector assembly 10 used in harsh

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environmental applications, the assembly comprising:

- a radiation sensing element 14 such as a sodium iodide scintillator 14 which transforms radiation into light
- a light receiving element 16 such as a photomultiplier tube for transforming light into electrical impulses
- a housing 18, preferably made of titanium or stainless steel, encasing the scintillator 14 and the photomultiplier tube 16 which.

The radiation sensing element 14 (or 414) is positioned inside a shield 30 (230) and it is wrapped around with a reflective tape 40 (strips, sheets, sheath with reflective material in liquid, powder or granular form). Between the scintillator 14 (414) and the reflector there is a potting powder elastomer material 28. The reflective tape 40 is wrapped around with the following:

- a barrier layer 376 made of aluminized polyimide
- a thermally compliant layer 374
- a bonding material 519
- a grease layer 316
- an aluminum foil layer 318
- another bonding material 519
- a protective sleeve 150 made of stainless steel or any other material transparent to gamma rays which includes a distribution pad 160 (flat portions), made of a material capable of dispersing a concentrated force (i.e., lubricant), in contact with the scintillator, grooves (bends) 216 contacting the shield 30 for providing

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dynamic support for the radiation sensing element 14 (414) and rings 418 (518).

The spacers driven between the sleeve 150 and the shield 30 suppress relative movement between the sleeve and the shield.

The photomultiplier tube includes a faceplate 118 and a photocathode and it is encased within an elastomeric element 58 which is further encased in a housing 60. Between the housing 60 and the detector housing 18 is an elastomeric boot 62 (elastic sleeve) with treads 52 for providing dynamic damping in axial and radial directions. The coupling between the scintillator and the PMT is done through an optical window 54.

Regarding claims 56, 57, 83, 84, 85 Frederick et al. fails to disclose the specific materials as claimed for the window, the powder, the reflector and the housing (respectively), however it would have been obvious to one of ordinary skill in the art at the time the invention was made to use these materials since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin* 227 F.2d 197, 125 USPQ 416 (CCPA 1960).

Regarding claims 86-90 Frederick et al. fails to include the claimed spray mechanism into the system, however one of ordinary skill in the art would have been motivated to include such a spray system to clean the window from flying debris since 1) it is a well known to use a spraying hose to clean windows from debris and dirt (e.g. windshield wipers) and 2) in order to reduce the measurement errors and to increase the signal-to-noise ratio all relevant radiation needs to enter the radiation sensing region and that is not going to happen if the entering windows are dirty.

Allowable Subject Matter

6. Claims 70-73, 81, 82 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: There is no evidence in the prior art searched of a radiation detector with the limitation as claimed including a rigid dynamic enclosure with a second (claim 70), third (claim 81) and fourth (claim 82) flexible supporting sleeve surrounding the already existing housing with its supporting sleeve.

Claims 71-73 are dependent from claim 70.

Response to Arguments

8. The arguments presented by the Applicant on 02/27/2003 regarding the claims was considered but are not persuasive: The Applicant argues that there is no prior art showing the application of a PEEK window in gamma radiation detection and that the use of PEEK windows in acoustic detection proves only that PEEK windows are transmissible of acoustic waves only. This argument is not persuasive because just as the window claimed in the present application the PEEK window of reference Pabon needs to withstand the same intense physical stress associated with the drilling process. Also, the argument that PEEK windows were not used before with gamma radiation detection is incorrect since as clearly shown in the pertinent reference cited Delpuech et al. (5596142), in a well logging apparatus in order to allow the gamma rays

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to reach the gamma detectors 81-83, the casing 78 has openings 91'-93' protected by PEEK windows 101-103. As such, the rejection to the claims still stand as shown in detail above.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Otilia Gabor whose telephone number is 703-305-0384. The examiner can normally be reached on Monday-Friday between 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 703-308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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April 11, 2003



DAVID PORTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800